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| 10/594,573 | 09/27/2006 | Toshiyuki Matsumura | 2006_1653A | 8219 |

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| EXAMINER | |
|---|---|
| MONIKANG, GEORGE C | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/594,573 | MATSUMURA ET AL. | |
| | Examiner | Art Unit | |
| | GEORGE C. MONIKANG | 2615 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *18-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/594,573.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/16/2007, 9/27/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 18-28 & 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohashi, US Patent 6,904,158 B1.

Re Claim 18, Ohashi discloses a speaker device comprising: a housing having an opening portion (*col. 2, lines 55-63*); a vibration system member for vibrating to generate sound (*col. 2, lines 55-63*); a support system member connected to the housing and for supporting the vibration system member in a manner which allows the vibration system member to vibrate (*col. 2, lines 55-63*); a first magnetic circuit disposed inside the housing and having a first magnet provided on a surface thereof facing the opening portion (*col. 4, lines 9-23*), and a first yoke provided lateral to the first magnet (*col. 4, lines 9-23*); and a second magnetic circuit having a second magnet disposed facing the first magnet via a gap (*col. 4, lines 9-23*), and a second yoke provided lateral to the second magnet (*col. 4, lines 9-23*), wherein a magnetic gap is formed in at least one of an interval between a side surface of the first magnet and the first yoke in the first magnetic circuit and an interval between a side surface of the second magnet and

the second yoke in the second magnetic circuit (*col. 4, lines 9-23*), the vibration system member includes: a first voice coil (*col. 2, lines 55-63*); a first voice coil bobbin provided to dispose the first voice coil in the magnetic gap (*col. 2, lines 55-63*); and a magnetic member made of a magnetic material other than a magnet (*col. 2, lines 55-63*), and connected directly or indirectly to the first voice coil bobbin so that the magnetic member is disposed in the gap between the first magnet and the second magnet (*col. 2, lines 55-63*).

Re Claim 19, Ohashi discloses the speaker device according to claim 18, wherein the vibration system member further includes a diaphragm at least a portion of which is composed of the magnetic member (*col. 4, lines 9-23*), the first voice coil bobbin is fixed to the diaphragm (*col. 2, lines 55-63*), and the support system member supports the diaphragm in the gap in a manner which allows the diaphragm to vibrate (*col. 2, lines 55-63*).

Re Claim 20, Ohashi discloses the speaker device according to claim 18, wherein the second magnetic circuit further includes: a magnetic plate fixed to a surface facing the opening portion of the second magnet (*col. 4, lines 9-23*), the second yoke is disposed lateral to the second magnet and the magnetic plate (*col. 4, lines 9-23*), and forms a magnetic gap between the second magnet and a side surface of the magnetic plate (*col. 4, lines 9-23*), the vibration system member further includes a diaphragm disposed (*col. 2, lines 55-63*), facing a surface facing the opening portion of the housing of the second magnetic circuit (*col. 4, lines 9-23*), the first voice coil bobbin connects the diaphragm and the magnetic member via the magnetic gap formed in the second

magnetic circuit (*col. 4, lines 9-23*), and the first voice coil is disposed in a magnetic gap formed in the second magnetic circuit (*col. 4, lines 9-23*).

Re Claim 21, Ohashi discloses the speaker device according to claim 20, wherein the first magnetic circuit further includes a magnetic plate fixed to a surface facing inside of the housing of the first magnet (*col. 4, lines 9-23*), the first yoke is disposed lateral to the first magnet and the magnetic plate (*col. 4, lines 9-23*), and forms a magnetic gap between the first magnet and a side surface of the magnet plate (*col. 4, lines 9-23*), and the vibration system member further includes: a second voice coil (*col. 2, lines 55-63*); and a second voice coil bobbin fixed to the magnetic member and for disposing the second voice coil in the magnetic gap formed in the first magnetic circuit (*col. 2, lines 55-63*).

Re Claim 22, Ohashi discloses the speaker device according to claim 18, wherein the second magnetic circuit further includes: a magnetic plate fixed to a surface facing the opening portion of the second magnet (*col. 4, lines 9-23*), the second yoke is disposed lateral to the second magnet and the magnetic plate (*col. 4, lines 9-23*), and forms a magnetic gap between the second magnet and a side surface of the magnetic plate (*col. 4, lines 9-23*), the vibration system member further includes: a diaphragm disposed, facing a surface facing the opening portion of the housing of the second magnetic circuit (*col. 4, lines 9-23*); and a connection member for connecting the diaphragm and the magnetic member via the magnetic gap formed in the second magnetic circuit (*col. 4, lines 9-23*), and the first voice coil bobbin disposes the first voice coil in the magnetic gap formed in the first magnetic circuit (*col. 2, lines 55-63*).

Re Claim 23, Ohashi discloses the speaker device according to claim 18, wherein the first and second magnetic circuits have the same structure (*fig. 1*), and the second magnetic circuit and the first magnetic circuit are arranged symmetrically about the magnetic member (*fig. 1*).

Re Claim 24, Ohashi discloses the speaker device according to claim 23, wherein the vibration system member further includes: a second voice coil (*fig. 1*); and a second voice coil bobbin connected directly or indirectly to the magnetic member and for disposing the second voice coil in the magnetic gap formed in the first magnetic circuit (*fig. 1*), the first voice coil bobbin disposes the first voice coil in the magnetic gap formed in the second magnetic circuit (*fig. 1*).

Re Claim 25, Ohashi discloses the speaker device according to claim 18, wherein the first magnetic circuit further includes: a magnetic plate fixed to a surface facing inside of the housing of the first magnet (*col. 4, lines 9-23*); and a third magnet fixed to a surface facing inside of the housing of the magnetic plate (*fig. 1; 12a*), and the first yoke is provided to form a magnetic gap between the first yoke and a side surface of the magnetic plate (*col. 4, lines 9-23*), and the first magnet and the third magnet are magnetized in directions opposite to each other (*col. 4, lines 9-23*), the directions being vibration directions of the vibration system member (*col. 4, lines 9-23*).

Claim 26 has been analyzed and rejected according to claim 25.

Re Claim 27, Ohashi discloses the speaker device according to claim 18, wherein the first magnetic circuit further includes: a magnetic plate fixed to a surface facing inside of the housing of the first magnet (*col. 4, lines 9-23*), the first yoke is

provided to form a magnetic gap between the first yoke and a side surface of the magnetic plate (*col. 4, lines 9-23*), and the first magnet is magnetized in a vibration direction of the vibration system member (*col. 2, lines 55-63*).

Claim 28 has been analyzed and rejected according to claim 27.

Re Claim 32, Ohashi discloses the speaker device according to claim 18, further comprising: a frame fixed to the support system member, wherein a speaker unit composed of the vibration system member (*fig. 1*), the support system member (*fig. 1*), the first and second magnetic circuits (*fig. 1*), and the frame (*fig. 1*), is attached to the opening portion by the frame being fixed to the opening portion (*fig. 1*).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 29 & 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi, US Patent 6,904,158 B1.

Re Claim 29, Ohashi discloses the speaker device according to claim 18, but fails to disclose the speaker device comprising a plurality of magnetic circuit units each composed of the first and second magnetic circuits. Official notice is taken that both the concepts and advantages of providing a plurality of magnetic circuit units each composed of first and second magnetic circuits are well known in the art. Thus it would

have been obvious to utilize a plurality of magnetic units as disclosed in Ohashi to increase the sound vibrating capabilities of a diaphragm.

Re Claims 33 & 34, Ohahsi discloses the speaker device according to claim 18; but fails to disclose the speaker device disposed in a car body or a video device. Official notice is taken that both the concepts and advantages of providing the speaker device in a car or a video device are well known in the art. Thus it would have been obvious to use the speaker device in a car or a video device to improve speaker operations in various devices such as automobiles and home theater systems.

5.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi, US Patent 6,904,158 B1 as applied to claim 18 above, in view of Dijkstra et al, US Patent 4,607,382. (The Djikstra reference is cited in IDS filed in 9/27/2006)

Re Claim 30, Ohashi discloses the speaker device according to claim 18, but fails to disclose a position detecting section for detecting a position of the vibration system member (*Djikstra, col. 3, line 49 through col. 4, line 7*); and a control section for controlling a vibration of the vibration system member by applying to the first voice coil a

signal obtained by adding a direct current component to an acoustic signal based on the position of the vibration system member (*Dijkstra, col. 3, lines 49-60: electric power is added to the coil to set it to its zero(balanced) position*) detected by the position detecting section so that a center of an amplitude of the magnetic member is at a balanced position of a magnetic field formed in the gap (*Dijkstra, col. 3, lines 49-60*). However, Djikstra does.

Taking the combined teachings of Ohashi and Djikstra as a whole, one skilled in the art would have found it obvious to modify the speaker device of Ohashi with a position detecting section for detecting a position of the vibration system member (*Dijkstra, col. 3, line 49 through col. 4, line 7*); and a control section for controlling a vibration of the vibration system member by applying to the first voice coil a signal obtained by adding a direct current component to an acoustic signal based on the position of the vibration system member (*Dijkstra, col. 3, lines 49-60: electric power is added to the coil to set it to its zero(balanced) position*) detected by the position detecting section so that a center of an amplitude of the magnetic member is at a balanced position of a magnetic field formed in the gap (*Dijkstra, col. 3, lines 49-60*) as taught in Djikstra for correcting the position of the diaphragm.

8. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi, US Patent 6,904,158 B1 as applied to claim 18 above, in view of Dijkstra et al, US Patent 4,607,382, and further in view of Proni, US Patent 6,501,844 B2. (The Djikstra reference is cited in IDS filed in 9/27/2006)

Re Claim 31, the combined teachings of Ohashi and Djikstra disclose the speaker device according to claim 30, but fail to disclose where the position detection section is a gauge (*Proni, col. 5, line 48 through col. 6, line 5*). However Proni discloses a gauge that controls the voice coil by sensing its position and balancing it after sensing it to be able to be able to center the voice coil within the magnetic gap. The combined Ohashi, Djikstra and Proni fail to explicitly disclose the gauge being a laser displacement gauge. However, official notice is taken that both the concepts and advantages of providing a laser displacement gauge are well known in the art. Thus it would have been obvious to use a laser displacement gauge since they are commonly used to measure the distance an object moves.

**Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEORGE C. MONIKANG whose telephone number is (571)270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George C Monikang/ 7/16/2008
Examiner, Art Unit 2615

**/Vivian Chin/**
**Supervisory Patent Examiner, Art Unit 2615**